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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/800,904	03/08/2001	Byung-hee Kim	SEC.467D	8021

7590 07/13/2004  
JONES VOLENTINE, L.L.C.  
12200 SUNRISE VALLEY DRIVE, SUITE 150  
RESTON, VA 20191

EXAMINER
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FOURSON III, GEORGE R

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/800,904

Applicant(s)

KIM ET AL.

Examiner

George Fourson

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspond nc address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 13-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/198,374.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_.

In response to applicant's telephone inquiry regarding the last Office action, the following corrective action is taken.

The period for reply of 3 MONTHS set in said Office Action is restarted to begin with the mailing date of this letter.

A corrected copy of the last Office Action is enclosed reflecting the agreement reached between applicant and Examiner Chaudhuri in the interview dated 2/24/04.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13-18 are rejected under 35 U.S.C. 102(a) as being anticipated by Yoon et al (J Appl. Phys. Vol.83, No.7), newly cited.

Yoon et al discloses formation of a  $\text{PbTiO}_3$  layer on a Pt electrode, formation of a  $\text{PbZrTiO}_3$  layer on the  $\text{PbTiO}_3$  layer, annealing the resulting structure to produce a perovskite crystal structure (section III) and formation of a Pt electrode on the  $\text{PbTiO}_3$  layer (see abstract, section II and figure 1, for example). The claims are open to the additional disclosed steps through use of the open comprising language as well as use of “on” as opposed to “directly contacting”.

This rejection may be overcome by perfecting the claim under 35 USC 119(a-d) in parent application S.N. 09/198,374.

Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon et al as applied to claims 15-18 above, and further in view of Hsu et al, of record.

Hsu et al is applied as stated in the office action mailed 6/2/04 as providing motivation to form a switching element and source drain regions as recited in claims 19 and 20 in combination with a ferroelectric capacitor which is formed according to the teachings of Yoon et al.

Claims 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki et al, Jpn.J.Appl.Phys., Vol.36(9-1997).

Suzuki et al discloses formation of a  $\text{PbTiO}_3$  layer on a Pt electrode, formation of a  $\text{PbZrTiO}_3$  layer on the  $\text{PbTiO}_3$  layer and annealing the resulting structure to produce a perovskite crystal structure (section 2 and 3.1). The reference discloses measuring permittivity of the resulting product which includes formation of an electrode on the  $\text{PbTiO}_3$  layer in capacitor formation (section 3.2).

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al as applied to claims 15-17 above, and further in view of Hsu et al.

Hsu et al is applied as stated in the office action mailed 6/2/04 as providing motivation to form a switching element and source drain regions as recited in claims 19 and 20 in combination with a ferroelectric capacitor which is formed according to the teachings of Yoon et al. Reliance is also on the teaching of forming the top and bottom electrodes of the capacitor, formed according to the combined teachings, using Pt or a conductive oxide (col.4, lines 10-35).

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Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (571) 272-2800. See MPEP 203.08.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner George Fourson whose telephone number is (571)272-1860. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (571)272-1855. The fax number for this group is (571)273-0224 and the customer service number for group 2800 is 571-272-2815. Updates can be found at <http://www.uspto.gov/web/info/2800.htm>.



George Fourson  
Primary Examiner  
Art Unit 2823

GFourson  
June 30, 2004